THE SCOPE

MARCH, 1954

PUBLISHED BY THE STUDENTS OF THE MASSACHUSETTS COLLEGE OF OPTOMETRY

THE SCOPE

VOLUME XXIV NUMBER 8

FEATURES

Third Year Article—Personality Factor.....Page 2
Inner Turmoil at M. C. O. .....Page 3
From The Editor .....Page 4
Understand And Save Your Vision .....Page 5
T. V. Photographs .....Page 11
First Year Article .....Page 13
Sports Review .....Page 14
Silhouettes .....Page 15

Third Year Article

by Lee Gellerman

The Third Year Class would like to extend its heartiest thank you to St. John & McColl—distributors of A. B. Dick products — for the excellent work they performed for us in their mimeograph work. Thank you again.

This month instead of the usual class article I would like to reprint an article that is pertinent to the student seeking his avocation in Optometry. Dr. Marvin G. Taub, a prominent optometrist, first introduced his article in the November 12, 1953 issue of "The Optometric Weekly," and for those students previously unable to benefit from its message it appears here in its entirety.

THE PERSONALITY FACTOR IN PRACTICE BUILDING

The average optometrist today leaves college with a diploma under his arm, technical knowledge unsurpassed and his ideals set as to where and how he will practice. Ethics and professionalism are part and parcel of the young doctor's equipment.

After he leaves school, he passes the board examination in the state where he intends to practice, picks a location for his office and then all he has to do is sit back and wait for the patients to start filling up his reception room.

He reasons: I have superb training and equipment; my ethics and professionalism are beyond reproach—so why shouldn't I make an outstanding success of optometry?

Since the ethical practitioner cannot advertise, he must wait for patients to come to him. When his first patients come to his office, the personality factor enters the picture. On this one factor, more than any other, depends whether or not he will hold the patient, and more important, have the patient recommend new ones.

We must realize that no individual is forced to go to any one practitioner, rather than another. Some patients go from one to another optometrist until he finds the man whom he believes is the most capable. In most instances, the capable optometrist is synonymous in the patient's mind with the one whose personality is the most favor-

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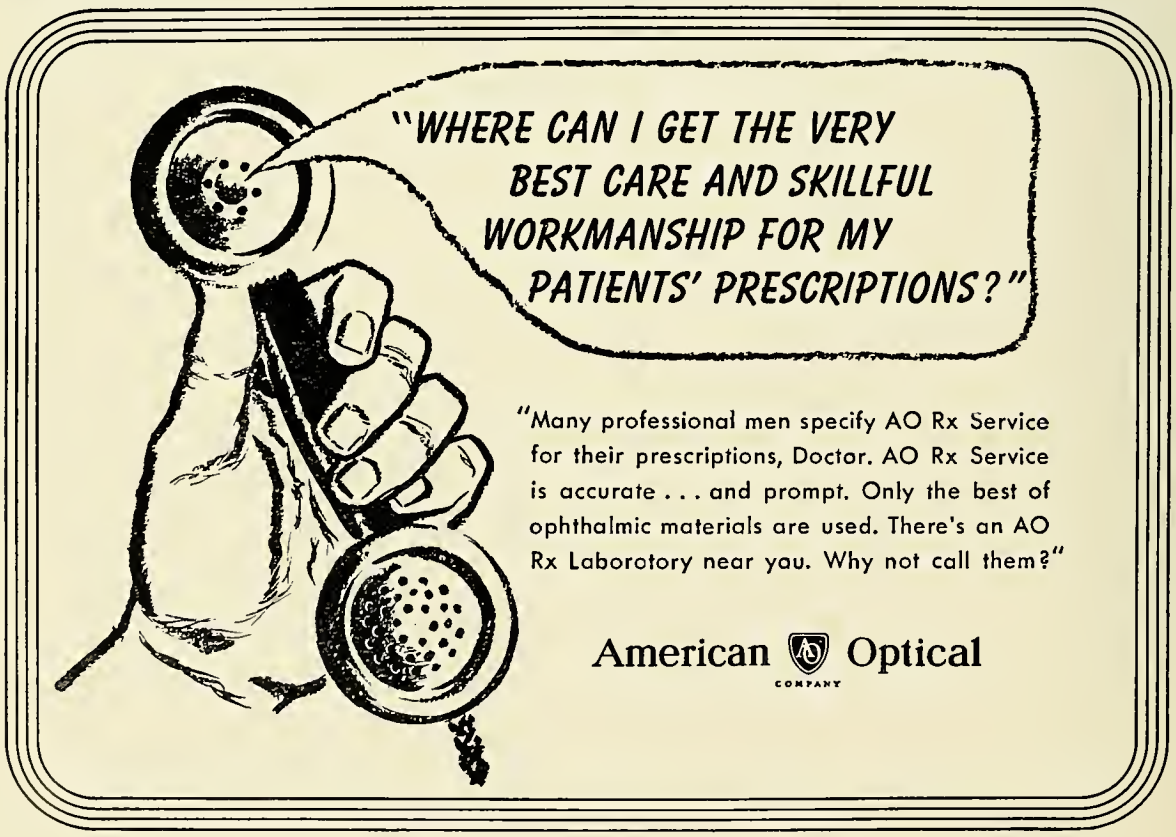
"WHERE CAN I GET THE VERY BEST CARE AND SKILLFUL WORKMANSHIP FOR MY PATIENTS' PRESCRIPTIONS?"
"Many professional men specify AO Rx Service for their prescriptions, Doctor. AO Rx Service is accurate . . . and prompt. Only the best of ophthalmic materials are used. There's an AO Rx Laborotory near you. Why not call them?"
American Optical
COMPANY

Inner Dilemma

Peter Eudenbach

Of all the problems which may confront any organization, be it a family or a national government, the most severe type is a fundamental one. A superficial difficulty, one which eats at the surface of an organization can be solved by correctly applying the basic principles upon which that group is constructed; however an inner problem, one which gnaws like a beaver at the root of a structure until it topples, is the most severe type of problem. Consequently, it is the most difficult to solve.

Optometry has many battles to fight, many wars to wage which are very serious and threatening. By far the most serious of these numerous problems is the issue on public relations. We must be unanimously accepted and fully recognized by the public in order that optometry as a whole can function as it should.

However, lying beneath this most serious problem is a less conspicuous problem—a fundamental one. This fundamental problem is smothered and obliterated by a garment of intricately woven superficial difficulties. Amid the tightly knit fibers of this shielding raiment runs a distinctive thread—a thread which, emanating from within, spreads and ramifies to the outer surface where it can be comprehended intuitively. This is the strand which is gnawing at our profession. We must get a firm grasp on it and swiftly jerk it from the garment else it will phagocytize all that remains.

Gentlemen, if we find a solvent for our public relations issue, we shall dissolve an iron curtain, and an open road with unlimited horizons will lie before us. In order that the public have full confidence in optometry, it goes without saying that the optometrists must have complete confidence in themselves. A poet who disliked the beauties of nature could not incorporate them in a poetical theme. Confidence, love and devotion to optometry are qualities which when cultivated by the student are maintained and carried over into actual practice. If a student is devoid of these essential qualities, the probability that he will possess them in practice is nil. Therefore, it is mandatory for our own salvation that these attributes are inherent in the character of each and every student.

As I see it, this is the underlying thread; this is a prerequisite that has not been fulfilled by all of the students at M. C. O. An appreciable portion of our colleagues have a dismal outlook on optometry. They have a poor opinion of themselves and of a wonderful profession. This inferiority complex coupled with a consequent distaste for the profession will yield bitter fruit in the years to come.

This portion of our colleagues to which I refer is not a stagnant group. In the course of almost three years I have seen it expand by gathering new members. The attitudes of these individuals are, of course, influential on the new and relatively uninitiated students. The members of this ever expanding body make various statements which manifest their distaste for the profession. Among their many complaints and declarations are: "The financial remunerations are not proportional to the education of the optometrist." "If I had it to do over again, I would have entered some other profession." "We don't have enough prestige," etc. Of course, it has to be understood that certain portions of any organization are bound to gripe because they are natural gripers. This percentage complains about everything and is not the portion of students to which I allude. The portion which I make reference to are sincere when they make the above statements and are the ones which are actually ashamed of optometry, the ones which have an unchanging and stagnant attitude toward the profession.

Gentlemen, you can see that the consequences of such a precarious situation will spread in ever widening circles. To demonstrate this syllogistically, I will state the following. To be accepted by the public and have the public educated to the qualifications of optometry, the profession must be united. To be united optometry needs strong alumni associations and strong well-knit bodies that can act for our cause. To have such strong bodies, the constituent members must be strong. To be strong, the members must have a sincere and wholehearted love for the work they perform.

The students of today are the trail blazers of tomorrow. They must be zealous and enthusastic about optometry in order to impart a like feeling to a public now starved of the truth.

What can be done to right this passive attitude of potentially great practitioners? We must convert those who have fallen by the roadside and take preventive measures to keep others from

Please turn to page sixteen

THE SCOPE

Official undergraduate publication of the
MASS. COLLEGE OF OPTOMETRY
178 Newbury Street
Boston, Mass.

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FROM THE EDITOR

The wise man speaks because he has something to say, the fool because he has to say something. Our feature article was written by an optometrist-to-be who didn't have to say anything but could have silently remained in the background unnoticed. But Peter Eudenbach told me of his thoughts on what was wrong with the student optometrist. "Inner Turmoil" is his first article on the greatest of the evils he discovered and not his last. His article may cause many of you to start condemning me for allowing an article which you feel allows optometry to be further persecuted, to be printed, but the need for its disappearance justifies its appearance as an article. Your further comments—pro or con—will be appreciated.

In the center pages of this issue is an article which can be easily removed and kept as a pamphlet. A pamphlet that should be read by all who treasure their vision. If you—the reader—are an optometrist I would recommend keeping it in your waiting room for your patients to read. If you are a student optometrist have your friends read the article. It may not directly benefit you now but in the future will reward you tenfold.

"Understand and Save Your Vision" written by George W. Knox, O.D., Ph.D., Associate Professor of Optometry at Ohio State University, is an article well written and badly needed for public education by our chosen profession—optometry. Laurels to George W. Knox.

PERSONALITY—*continued*

able. It is rather difficult to determine why this favorable response was illicited in the first place. It may be that it was actually a negative response to the other practitioners that the patient had seen.

When the first patient walks in off of the street —he was not recommended—he immediately gets his impression of you. First, he notices the reception room. Is it neat and relaxing or does it need a good cleaning? What type of reading matter is found there? The reading matter should be of a high caliber; some better magazines and a scattering of professional literature, but there should not be any of the so-called pulp publications.

When the patient meets you for the first time at each succeeding visit, he either will add or subtract from his sum total judgment of your personality.

In the case of the optometrist, personality is the impression that he conveys to his actual as well as potential patients. The personality is favorable only when it is an asset in building and maintaining a practice. Personality and moral character are not the same thing—just as ethics and professionalism are two separate and independent ideas. A Casper Milquetoast type of individual will possess a moral character above reproach, but will his personality be conductive to making a good optometrist or practice builder? If the optometrist does not live up to pre-conceived ideals of the patient, he will wind up only with an empty office.

What then are desirable personality traits? First, personality traits are of two types. The stable traits are those that remain constant in all instances, while there must also be a shifting or changing set of personality factors with which we adjust ourselves to diversified types of patients encountered. Undesirable, as well as desirable, factors give us the sum total of personality. The patient will surely take notice of the fact that our own persons are clean. An important factor in creating proper patient reaction is the doctor's appearance. Nothing gives the patient a "my he is sloppy" impression as quickly as seeing an optometrist wearing a soiled or wrinkled clinic jacket. But, when he sees the optometrist washing his hands and placing clean eye cups in the phoropter before beginning an examination, he will appreciate such simple hygienic precautions. A clean well-arranged refracting room, tends to create a feeling of patient-confidence in the

Please turn to page thirteen

Understand And Save Your Vision

by George W. Knox, O.D., Ph.D.
Associate Professor of Optometry
Ohio State University

This article is written for anyone who can see. It will:

1) give you an understanding of your own vision;
2) tell you how to avoid the greatest cause of blindness;
3) list 10 signals that something is wrong with your vision;
4) tell you how to avoid incompetent eye examiners;
5) tell you the meaning of complete visual care;
6) ONLY TAKE ABOUT 30 MINUTES OF YOUR TIME!

I. TO SEE OR NOT TO SEE

Today you can see—you are able to read this booklet, you can see your friends and your home and you can see to do your work. Some day, some of you will no longer possess this privilege of seeing. This booklet is written because, fortunately, half of those who are expected to lose their vision **can prevent this loss.** This article will tell you **how** you may be able to prevent it.

In the booklet "Eye Facts," Franklin M. Foote, M.D. Executive Director of the National Society for the Prevention of Blindness* states that:

> "Three quarters of a million people now alive will become blind before they die . . . unless they avail themselves of opportunities now within their reach to prevent it."

Of the "Robbers of Sight," Dr. Foote has this to say about **Neglect.**

> "This is the greatest single cause of blindness in America today. This year half of the 23,000 people who will lose their sight will do so needlessly. Learn to recognize the symptoms of eye trouble in children and adults. Your best precaution is a competent, professional eye examination. Remember, vision protection begins with you."

II. NEGLECT, AND NEGLECTED

Neglect may involve your doing nothing about your vision. Unfortunately, neglect may also involve your feeling of false security that **any** pair of glasses or **any** eye examination protects your vision. The neglect may be on the part of an unprofessional examiner, who has omitted many tests in his three dollar five to twenty minute examination, performed for the purpose of selling you a pair of glasses.

If you want to safeguard your vision, your first step is to realize that a pair of glasses and competent professional visual care are two entirely different things. You can obtain glasses by mail order, you can pick them up in a dime store. "Serve yourself and Save" signs can be seen in the window. Save What? Your money of course. But what about your Vision?

You can pick up a pair of glasses in a department store, or a jewelry store where you can pay on credit, or in one of the price advertising stores where they just "sell glasses." Some will spend five or ten, or even fifteen minutes with you, if it's not a busy day, to determine "a prescription." The person who examined you is ineligible for membership in the American Optometric Association because of unethical conduct and inadequate examination. Somehow, nearly everyone who enters finds that he "needs glasses" of some sort; and somehow that pair you got cost more than what you read about in the paper. I wonder why? One reason is that these places could not even pay their rent if all glasses were "sold" at the price advertised. The advertised price is just a "come-on" technique. Some jewelry stores charge three dollars for the exam to entice you to go there. Then you are found to "need glasses"

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* The National Society for the Prevention of Blindness, 1790 Broadway, New York 19, N. Y., is a non-profit organization. It operates entirely by donations. Your donation may help save someone's sight.

and the total cost turns out to be as much or even more than you would pay at a legitimate professional office.

What happened during that ten minute exam? There are about twenty-one tests in a complete examination, sometimes more, depending on what is found. Did he do twenty-one tests in ten minutes? Did he leave out the first test—that one where they look for diseases of the eye, such as glaucoma? Let me quote what Dr. Foote says about Glaucoma.

> "This sneak thief of sight has victims everywhere—many of them unaware of their plight . . . When detected in time—through regular eye examination—glaucoma can be stopped and vision can be preserved."

By "regular eye examinations" Dr. Foote is not referring to a five or ten minute quickie test. An adequate visual examination averages about one hour.

To protect the public's vision, legislation has been passed in many cities outlawing these price advertising concerns. In some cities legislation has been attempted and failed, because of the financial or political power of these stores and, in a few cases, because of lost advertising to the newspapers. **An informed public would not allow this to happen.**

This is no attempt to criticize retail merchants or newspapers. If completely informed, I am confident, the greater majority of these groups will honestly do what is best for the protection of the public's vision, regardless of the political or financial factors.

The American Optometric Association, the various State Optometric Associations and informed newspapers who are unafraid to tread on "the toe of profit" are putting forth an effort to protect the public from these unethical quickie eye-testers and glasses-sellers.

Let me quote a few paragraphs from an Albany, New York newspaper of November 16, 1953. This publication followed an investigation made by the New York State Optometric Association concerning the price advertising, quickie testers.

> "Unless drastic action is taken immediately, 'irreparable injury will be done to the vision and health of many more thousands of unsuspecting patients, the association said in a statement . . . re-examinations of persons who had been given "Quickie" examinations showed:
>
> 1. Three out of four 'had been given completely wrong lenses which, in some cases, had caused permanent injury to the patients' eyes'.
> 2. In three out of five cases 'the lenses dispensed were found to be rejects or seconds, which should have been destroyed by the manufacturers, or the lenses were of the uncorrected, store-counter variety.'
> 3. In nearly half the cases, 'examiners had ignored or overlooked such dangerous pathologies as cataracts, glaucoma, detached retina or chorioretinitis.'

The first two mentioned conditions, cataracts and glaucoma, are among the top five disorders listed by Dr. Foote (of the National Society for Prevention of Blindness) as the most frequent causes of **BLINDNESS.** 12,000 people (note statistics on page one) saved from blindness during the coming year, by avoiding neglect and inadequate examinations, most certainly overshadows dollars and local politics.

The next time you read in the paper "Glasses $8.50. Why Pay More?" you should have the answers to the question. You pay more, not for glasses (you may not even need any) but to protect your vision through adequate examination and subsequent care. An hour of professional examination followed by at least another hour of total subsequent service naturally costs more than a five or ten minute hit-skip eye test. An inadequate examination gives a feeling of false security and is just as dangerous as total neglect.

If your intention is to save a dollar (and you may even waste that) you can go to a store for glasses, but if your intention is to save your vision, you will seek professional visual care which is found only in professional offices, never in price advertising, quickie testing, jewelry or a glasses store.

Can anything be done about these quickies who have already been found (by State Association investigations) to so lightly pass over the robbers of sight? The answer is "Yes." Consider the statement made by the editor of the American Journal of Optometry (February, 1954, issue).

> "The 'quickie' refractionist is bad for the public's visual well-being. He will disappear only when he is driven out by the opinion of an enlightened public, by the enforcement of existing legislation, and by the enactment and

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enforcement of further stringent legislation curtailing his activities."

The task is two-fold:

1. First—the public must be enlightened by professional vision specialists and by their state and national associations.
2. Then—the enlightened public must cease promoting and patronizing the unprofessional examiner, and must aid in promoting legislation for the protection of those who are less enlightened.

III. ADEQUATE PROFESSIONAL VISUAL CARE

Professional visual care requires years of preparation and in addition, a sincere desire to render maximum benefit to the patient regardless of how much time is required.

Why should it take so long to examine a patient's vision and perform the subsequent services? All activities could not be here described because of their technical nature, but some asepcts of the examination and subsequent services can be given.

First of all, the examiner looks for possibilities of existing diseases, of which there are many. If eye disease is present, the patient is referred to an ophthalmologist** for treatment. If disease is not present, the examiner studies the nature of the patients visual problem and the use he makes of his eyes. The final prescription or recommendation can not be successfully based alone on the condition of the patient's vision, but must also involve the requirements put upon vision in the patient's daily and occupational life.

Each eye is then examined individually by several different methods to find what is needed to put each eye in proper focus for distance and for near work. This is still not nearly enough. Each eye may be in perfect focus, but they may not work together properly, either in seeing, or relative to the muscles that move the eyes about. This team work of the muscles depends upon the brain, which sends activating impulses to them. The teamwork operating at distance may be entirely different than that while doing close work.

The professional optometrist prescribes glasses only when they are needed, and many people do not need glasses. If a prescription is needed, further time is required to accurately determine the various measurements of eyeware. Some of these measurements include the determination of the proper size and shape of the glass, the distance between lenses, the proper height and position of a bifocal segment, the decentration and prismatic effect of the lenses relative to the distance apart of the eyes, and the muscular balance of the eyes. A good optometrist spends a considerable amount of time working out some of these and other relationships, **after the patient has gone home.**

When glasses are ready they are examined for accuracy of prescription before the patient returns. When the patient does return it is not a matter of picking up his glasses while he double parks his car, as he might pick up an ordered bundle of groceries. Time should be taken in fitting the glasses properly to the face and in instructing the patient how to use his prescription relative to his visual condition and the visual requirements of his particular activities. This advice and instruction is just as important as the pair of glasses in solving the patient's visual problems. The patient should make sure that he understands and follows these instructions.

The optometrist's job is still not over, for it is advisable that the patient return for a re-check to make sure that all problems of adjustment to the new prescription are progressing satisfactorily. Even after this, and usually without further charge, the average patient returns one or more times, for time-consuming, but necessary, readjustments as the glasses are worn.

All these services are certainly different than "buying a pair of glasses" as you would buy a hat. All together, these services take a good two hours per patient and the ideal number of patients per average day was recently estimated at an optometric meeting in Pennsylvania to be four —if complete service is to be given each patient.

Since you are mainly paying for profressional service, time and skill, rather than for two pieces of glass, a bit of plastic and perhaps some gold trim, the American Optometric Association has recommended a fee system whereby the Optometrist gains financially **only by fees** for professional service of (1) examination and (2) the sum total of the other services. The **wholesale** cost of materials is simply added to the service fee. In this way the optometrist is financially independent of

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** A certified ophthalmologist has received three years of specialized training beyond his M.D. degree. He specializes in giving medical treatment for diseased eye conditions and to perform eye operations when needed.

type of frame selected or the cost of prescription needed. He is therefore free to advise style of frame and type of lens needed, based solely on the patient's welfare. He gains by services rendered and not by materials sold; his job is to protect your vision and not to operate as a merchant.

IV. HOW THE EYES WORK

How do the eyes see? The answer is, they don't. The eyes merely take a picture, and not too perfect a picture, at that. It is the brain that receives nerve impulses produced by these pictures in the two eyes, and only by moulding them together with visual and other sensory impressions of the past is vision as we know it, produced. This will be discussed in Section VII.

For the moment let us consider how an eye takes a picture. This can be made easier if you first consider the essential features of a camera, which is much simpler than the eye.

First we need a light-tight box with a hole in it. It is advantageous to have a shutter, so that the hole can be made large to let in more light when the light is too dim, and made small when the light is bright. The only other requirement consists of a lens behind the hole to focus a picture on a photographic plate.

The white of the eye, called the sclera, serves as the light-tight box. The sclera form, however, is round rather than square, and is about one inch in diameter. The pupil, or black of the eye, is the hole. It looks black because the sclera keeps it dark inside the eye. The blue or brown, called the iris, is the shutter, which makes the hole large in dim light and small in bright light. A powerful living lens just behind the hole, or pupil, focuses the light to make a picture on a "photographic plate" called the retina on the inside back of the eye.

The camera has a focusing device to adjust or accommodate for different distances of the object observed. Inside the eye is an accommodation muscle giving the lens a temporary additional power which is necessary to see clearly when we look at something close—as in reading. This focusing device gradually weakens as we grow older.

Each eye also has muscles attached to the outside (six for each eye) that enable our eyes to move about and to work together when we wish to point both eyes towards an object in order to see it most effectively.

V. OUT-OF-FOCUS EYES

A camera may be out of focus and thus produce blurry pictures. So can the eye. By exacting measurements the degree and type of defect can be found and a prescription determined that will eliminate the blur or the visual discomfort. You will be better able to understand and follow the recommendations given you by your optometrist if you study the following most frequent defects.

1. **Near-sightedness** (myopia) if a camera is too long or if its lens is too powerful, it will give blurry pictures unless one takes a picture of something very close to the camera. This is because the closer an object is to the camera, or to the eye, the more power is required to take a clear picture. Such an overpowered or long camera could be called a "near-sighted" camera. The same applies to the eye. If a "minus lens" of the proper amount is placed in front of the camera, or the eye, the pictures will then become clear. Minus lenses of a prescribed amount are worn by near-sighted people to clear the images in their eyes.

2. **Far-sightedness** (hyperopia) If a camera is too short or is under powered, even distant objects would make blurry pictures, but close objects requiring extra power would make pictures even more blurry. This camera could be called a "far-sighted" camera because it is better for distant objects than it is for near objects. Likewise, there are far-sighted eyes, but the eye has a special device called accommodation, whereby the muscle inside the eye (called the accommodation or ciliary muscle) can contract and cause the lens in the eye to have a temporary additional power, giving clear images so long as the muscle is active. The far-sighted person thus has clear vision only by means of using this muscle. It is frequently advisable to prescribe a specified amount of "plus lens" so that the patient will not have to overwork this muscle. The result is easier, more comfortable vision and less eye strain.

3. **Astigmatism.** The lens of a camera might not be symmetrically curved, but might be shaped somewhat like an egg which has different curvatures in different directions. Pictures would be blurry, both for distance and for near objects. Clear pictures could be made, however, by placing a nonsymmetrically curved lens, called a cylinder, in front of the camera. The cylinder of a special power would have to be placed exactly opposite the arrangement of unequal curvature of

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the camera's lens. The same situation applies to the eye and there are 180 different degrees of orientation for the "axis" of the spectacles lens cylinder to be placed, only one of which is perfectly correct. It is quite difficult to come sufficiently close to the proper axis in hasty examinations. Most people wearing glasses have cylinder corrections for astigmatism combined wtih corrections for either near-sightedness or far-sightedness. Uncorrected astigmatism gives blurred vision and in addition, visual discomfort due to the attempt to accommodate differently for all objects which are differently oriented.

4. Accommodation Difficulties (presbyopia) A young person who can see clearly at a distance can also see clearly for near objects by increasing the power of his lens with the accommodation muscle. The closer the object, the more accommodation is required. Bring this page slowly toward your eyes. You will finally reach the limit of your accommodation and the print will begin to blur. This is the nearest point that you can have clear vision and the distance of the page from your eyes is called your "near point of accommodation." At the age of ten, your accommodation is at its peak and it declines continuously for the rest of your life, as your near point recedes. On the average, by the age of fifty, you can just barely, by maximum effort and for a short period of time, read at the average reading distance of sixteen inches. Usually during the forties you become unable to read for long periods without discomfort or blur unless the print is held far out. Even with younger people, excessive near work in school or in a particular "near Work" occupation, constitutes excessive effort over too long a period of time. Sixteen inches is only the average near working distance. Examinations should always include a measurement of your habitual working distance requirement in your particular job; otherwise, the reading prescription will not fit your particular near work demands.

To do what your accommodation did easily in younger days, the proper amount of additional "plus" power must be added. This may be put into reading glasses or into the bottom part of bifocal lenses. Bifocals (bi meaning two, "focus") have one focus or power for clear distances vision and an added power at the bottom for reading. For these people there are two important distances —far away and the reading distance.

As accommodation continues to fail, things at arms reach are too close to accommodate through the distance portion at the top, but are too far out for the additional plus power at the bottom. People who are in occupations for which clear vision at arms reach is important, may use trifocals, where a third intermediate prescription is placed between the other two for clear arms length seeing. These are also called continuous vision lenses since the in-between blur has been eliminated.

VI. MUSCULAR IMBALANCE AND ITS CORRECTION

So far, we have been talking as if you have only one eye, but most of us have two. Even though each eye has 20/20 vision, is neither near-sighted, far-sighted, nor has astigmatism, and has plenty of accommodation, you still may have visual discomfort. (Commonly called "eyestrain").

Good depth perception requires that the two eyes work together. Close one eye and note how flat things appear. In the 3-D (third dimension) movies, the two eyes must be used together.

To get a picture at the center of each retina, each eye must point toward the object. If the object is far away, the eyes point almost straight ahead. When the object is close, the eyes must point inward to put the images in the proper places on the two retinas.

These required positions of the eyes for various distances are controlled by six muscles attached to the outside of each eye, far enough back to not be ordinarily observable.

Since we have two pictures of each object, we tend to see double unless, the eyes point correctly. For distance, the eyes must point straight ahead. However, some eyes tend to point outward (exophoria), some tend to point inward (esophoria) and in some, one eye tends to point above or below the other (hyperphoria). Ordinarily by muscular effort the eyes maintain the straight-ahead position in spite of a phoria condition, but discomfort may be produced by continuously doing so. During extreme fatigue, sickness, or intoxication, the eyes may give up, relax, and put up with double vision. If extreme, the eyes may be observed to then be crossed, into point outward, or one above the other.

In reading, eyes must point inward a definite amount for single vision. Some tend to point in too much (esophoria at near) or not enough (exophoria at near). The distance and the near phoria condition are usually different due to dif-

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ferent reflex effects between accommodation and convergence (looking inward) for different people.

If one "gives up" permanently, the double vision (diplopia) may leave as the brain suppresses impulses from one eye in order to eliminate the confusion. However, the individual is then functionally a one-eyed person, and the unused eye may lose much of its vision by not being used.

A muscular imbalance then, usually produces discomfort, may produce double seeing and a misalignment observable by others, and can produce a functional loss of vision of one eye.

According to the severity and type of the condition, it may be dealt with by "prism prescription" in glasses, "eye exercises"* or if extreme, by a muscle operation done by an ophthalmologist.

In most quick examinations of five, ten, or fifteen minute duration these phoria measurements **are not even made,** but glasses are generally "sold" in spite of this time-saving but dangerous omission.

* "Eye exercises" actually involve training the brain as well as muscle.

VII. THE EYES ARE NOT ENOUGH—
Vision is Psychological*

The scene before your eyes has been photographed. The light and the eyes have played their part; they can do no more. A new form of energy must now relay the image messages to the brain before seeing is possible. This form of energy is called the nerve impulse. As the retinas of the eyes are activated by light images, they send a steady stream of nerve impulses along a highway, called the optic tract, to the visual area of the brain. These nerve impulses travel at a speed of over 100 yards per second, or approximately 200 miles per hour, about 10 times the speed of the world's fastest sprinters. After the nerve impulses reach the visual area of the brain, something magical occurs. Here, in the dark confines of the skull, where light has never entered, **vision is created!** The brain is the dark room where the pictures taken by the eyes are developed and perfected.

Although the human eyes are very highly developed mechanisms, the pictures they take are far different than the final products of vision prepared in the brain. If the brain went on strike and failed to perfect the pictures from the eyes, your vision would be so disturbed that you would find yourself in hopeless confusion. You would see double and everything would appear upside down. If you shut one eye in order to obtain single vision, there would be a black hole in the scene before you, as there is a blind spot on each retina of the eye. Size and distance would be misrepresented; a fly on a window pane, a bird on a branch, and a plane in the sky could be easily confused. As a six-foot man standing 10 feet away, walked 20 feet further away, he would seem to shrink to a two-foot dwarf. Anything placed sidewise to your view woud be seen in a distorted shape. A round plate, for example, would appear the shape of a football. Around noontime everything would look white, including coal, but just after sundown, everything would look black, including freshly fallen snow.

You may ask, "What is the practical aspect of this discussion?" It is this, there are thousands of pairs of "perfect glasses" laying idle in dresser drawers and other storage spaces. Why? Because seeing is psychological (involving learning, training and adjustment) and many people have been unable to adjust to their new prescription either because a quickie examiner could not afford the time to give instructions regarding the psychological effects of the new prescription, or good instructions were given by a qualified examiner but the patient paid no heed to this necessary aspect of the professional service.

Any change in prescription will change the size or shape of the retinal images or the required muscular teamwork of the two eyes (the muscular teamwork is controlled by the brain). There is a new system of eye-brain relationship that needs to be established. An increased correction for near-sightedness (or a decreased correction for far-sightedness) makes the retinal images smaller and things may look smaller or farther away **at first.** An increases correction for far-sightedness (or a decreased correction for near-sightedness) will make the retinal image larger, and things may look larger or closer **at first.** Any change in astigmatism will change the shape of the retinal image and things may look tilted **at first.** A prism in the prescription changes the eye teamwork and things may look farther, or closer, larger or smaller and appear curved **at first.**

When you leave the quickie-store **you're on your own, he's through.** Maybe you will adjust to your brand new glasses and maybe you won't

(Continued on next page)

* The author is a certified psychologist, with three university degrees in psychology as well as an optometry teacher and a private practitioner of optometry.

(even if we assume the prescription is correct). Be careful in going down stairs and in driving or you may harm more than your eyes. Don't expect to go back for help because he can not afford to spend the time there are too many bargain shoppers lined up for a three dollar quickie exam.

If, on the other hand you sought professional care you are not on your own when you leave with your glasses. You have been given definite instruction, you are entering an adjustment period and you have an appointment for a re-check. Further progress sessions will be made until your problem is solved, **if you co-operate.** All this is formally included in the original fee, without further charge.

VIII. A SIX POINT PLAN OF VISION PROTECTION

You can safeguard your vision by the following six rules:

1. **First put your vision in the hands of a competent vision specialist.** You can not expect to diagnose your own visual needs when it has taken the specialist years of preparation to be able to do it for you.
2. **Avoid unprofessional care.** Quick examinations can only be made by leaving out or hit-skipping over important aspects of the examinations. The quickie examiner can be spotted by price advertising in the newspaper, by working in a department, jewelry, or eye glass store, by assembly line techniques or twenty or thirty cheap "examinations" a day. Is your examiner a member in good standing of the American Optometric Association or is he ineligible because of unethical conduct? For your protection the secretaries of the local divisions of this national organization have lists of those who are ineligible because of unethical conduct.
3. **Have periodic complete examinations.** The American Optometric Association recommends not longer than once every two years. Many serious visual defects cause neither pain nor blurred vision in early stages. Early diagnosis is of major importance with many diseases which may produce blindness if not detected and referred to the proper specialist for treatment.
4. **Be sure you understand and follow the recommendations of your vision specialist.** A pair of glasses may be of little value to you, if you do not understand their proper use in relation to your visual condition and your daily visual requirements.
5. **Do not hesitate to consult your optometrist between complete examinations.** A misalignment of your frames, for example, may effectively change your prescription by the tilt produced. Most examiners include such services in their original fee and do not make additional charges.
6. **See your examiner if any of the following symptoms of visual defects should appear:**
   (1) Dark areas when one eye is shut, haziness as in looking through a fog, or colored lights.
   (2) Oversensitivity to bright lights or difficulty seeing in dim light.
   (3) Discomfort, blurring or double vision at near, as in reading, knitting or sewing, or a tendency to hold the material too close or too far out.
   (4) Pain in or around the eyes or headaches associated with the use of the eyes.
   (5) Inflamed eyes, swollen, red or crusted lids, itching, smarting or burning sensations, or excessive watering of the eyes.
   (6) Inability to obtain a definite depth effect in 3-D movies.
   (7) Discomfort, blurring or double vision at distance as while viewing television, movies, in driving, or while reading distant signs.
   (8) A deviation of either eye, in any direction, any time.
   (9) Unequal size of the two pupils or pupils that do not constrict when light is presented.
   (10) A tilting of the head or persistant turning of the head in one direction while observing objects.

Be aware of these symptoms. Remember, VISION PROTECTION MUST BEGIN WITH YOU!

T. V. Photographs

by William Hissey

A fascinating experiment by today's neophyte photographers seems to be an attempt to catch the fleeting pictures on their television screen and come up with a fairly presentable photograph. History in the making, friends on various shows, etc., combined with an active imagination, can result in some interesting pictures. A little common sense, the slightest technical knowledge, and

Please turn to next page

a halfway decent camera are all that are necessary.

The T.V. picture is naturally an important factor to be considered. As focus, brightness, and contrast are liable to change as the set warms up, be sure it has had a reasonable time to "steady down." The only light used in taking these pictures is light from the picture tube itself. An average brightness, with a fairly low contrast is most desirable.

As the average T.V. screen is a small object, the camera should be set up no more than 3 to 4 feet before the screen, but no closer than 2 feet, as the lines making up the T.V. picture will be very obvious in the negative, and, therefore, unavoidable in the print. A tripod is preferable, but a firm support will do almost as well for mounting the camera. A cable release will help prevent movement of the camera when shooting. As the working distance is close the focus must be very accurate. Add an inch to the measurement from the camera to the protective glass over the tube to allow for the distance from the glass to the tube.

Due to the nature of the T.V. image, which is composed of 525 lines being constantly changed 30 times a second, it is necessary to use a shutter speed of less than 1/30 second, or an image of the screen with only a partial picture on it will result. 1/25 second is ideal, being less than 1/30 and fast enough to stop slight motion of the subject.

At 1/25, an F-stop no slower than F/4.7 is required. If shooting at F/4.7, it will be necessary to over-develope the film 40-50 percent. At 1/25 and F/3.5, 10-30 percent is required.

Some exposures requiring no over-development are—1/10 at F/4.5, 1/5 at F/5.6, ½ at F/8, and one second at F/11. These are more prone to blur, however, as the speed is not enough to "stop" the motion.

When shooting, be sure to turn out all lights in the room to avoid "washing out" the T.V. image.

Get the feel of when the best moment is to try the shutter. Avoid shooting while the subject, is talking or moving, or the camera is dollying, if possible. Close ups are usually quiet and clear, and result in good photographs.

When printing, it is well not to blow the size of the print up too large, as the image lines become too distracting. 5 x 7 should be maximum.

Variations in these conditions, either purposely or accidently, may create interesting effects.

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First Year Article

by Virginia Mastrobuono and Frank Vanoni

Movie Review of the Week "The (P)robe"

in Retinoscope-the modern miracle that sees you with glasses

A 3-D Wonder with T. L.* Sound

Place: Bostonia, Mother City of the world

Time: The pagan days of Emperor Tiberius Reynoldsius.

Scene 1—Banquet hall, basement, of Collegium Optometricum on Via Newbury. Monday morning.

Tribunes DiGregorio, Shapiro, Baer, and Miles are playing a game which they learned at the wars in the North-poker.

Shapiro—You fellows got any bets on the games in the arena this afternoon?

Baer—I hear that the Emperor has sent for some real crazy cats for the boys to fight.

Miles—I got a peek at them in their cages next to the arena and they smell pretty tough to me.

DiGregorio—Oh well, what's a few men more or less?

Scene 2—The Laboratorium, main arena. The same afternoon.

Emperor Tiberius unlocks the cat cages and leads the first group of gladiators into the arena. They are all captured slaves, from the provinces around Bostonia.

Tiberius—Let's go.

The slaves enter the arena armed with knives and lances.

Garandus—(looking at his animal)—Wow! look at those muscles.

The slaves are frightened, but they begin the fight with courage. They begin stabbing and tying, but the animals put up an awful fight. While they are battling, the Emperor recites an old Greek poem called "Classificatione." Finally the battle ends. The slaves are weary and worn, but most of them have survived. As the bodies are carried away, they march from the arena.

Tiberius—You're good!

Angelos, a Greek messenger, arrives.

Angelos—The second group of slaves has arrived.

Tiberius—Throw them to the cats!

And as the sun sinks slowly in the West the sounds of battle are heard again. . . .

The End

* Too Loud!

Can You Answer This

Combined question in physics and Zoology? (Doctor's Wright and Reynolds please Note).

If you put some liquid lead at 500°C into a lake whose temperature is 15°C will any cold-blooded (pockilothermos) fish or amphibiano be killed by the heat given off?

If so, how many? How many calories will be given off?

Note:

Don't forget the "freezing" point of lead is 32°C. And even a skink (Eumices) does not like it that tropical.

This was submitted by a denoted person who is interested in the welfare of his classmates in phycics. No other than, Fred Ames.

PERSONALITY—*continued*

doctor.

When speaking with the patient, the optometrist should not have a know-it-all attitude, but neither should he place himself on an equal level with the patient. A happy medium should be reached by showing the patient you are sincerely interested in his visual problem, and also that you can render him capable, complete service. Without winning the patient's full confidence, you can be assured that recommendations will be few, if any.

Physical appearance is another important factor to the patient in determining whether he likes or dislikes the optometrist. Few of us are perfect; therefore, any weakness in physical appearance should be improved. It may be merely combing your hair differently, growing a mustache or shaving it off.

Oral hygiene should be adhered to by the optometrist after smoking and before meeting each patient.

Another thing, optometrists, more than any other professional group, should wear their eyeglasses correctly, not only insofar as adjustment is concerned, but also as to color and shape.

Have you ever analyzed your manner of speech? Do you speak too fast or too slow, harshly or low? It might be worth while to take a course in public speaking. Good speaking qualities are a requisite in developing patient confidence because you can convey or dispel confidence by the way you use words.

The patient who comes to you does not know optometry. You are the vision specialist, but unless the patient likes you, he will not long remain your patient. If you lose a patient, you must find out "what is wrong with me?" If you do not try to analyze and remedy the cause, you are apt to have a patientless office.

M. C. O. BASKETBALL
OH, CAPTAIN, MY CAPTAIN!

Prior to the first game the basketball squad elected co-captains for the '53-54 season. They were Sidney Green and Raymond Alie. There was something unique about the choice; Sid Green has been on the squad for his 4 years at the college and has never been a regular; yet, the feeling of the entire squad showed their appreciation and the value they held for the men on the bench, the player who plays only a few minutes of each half while a regular is resting. It was an honorable selection of which we are proud. For the record, Raymond Alie is yours truly, need I say more?

TRICKS OF FATE!

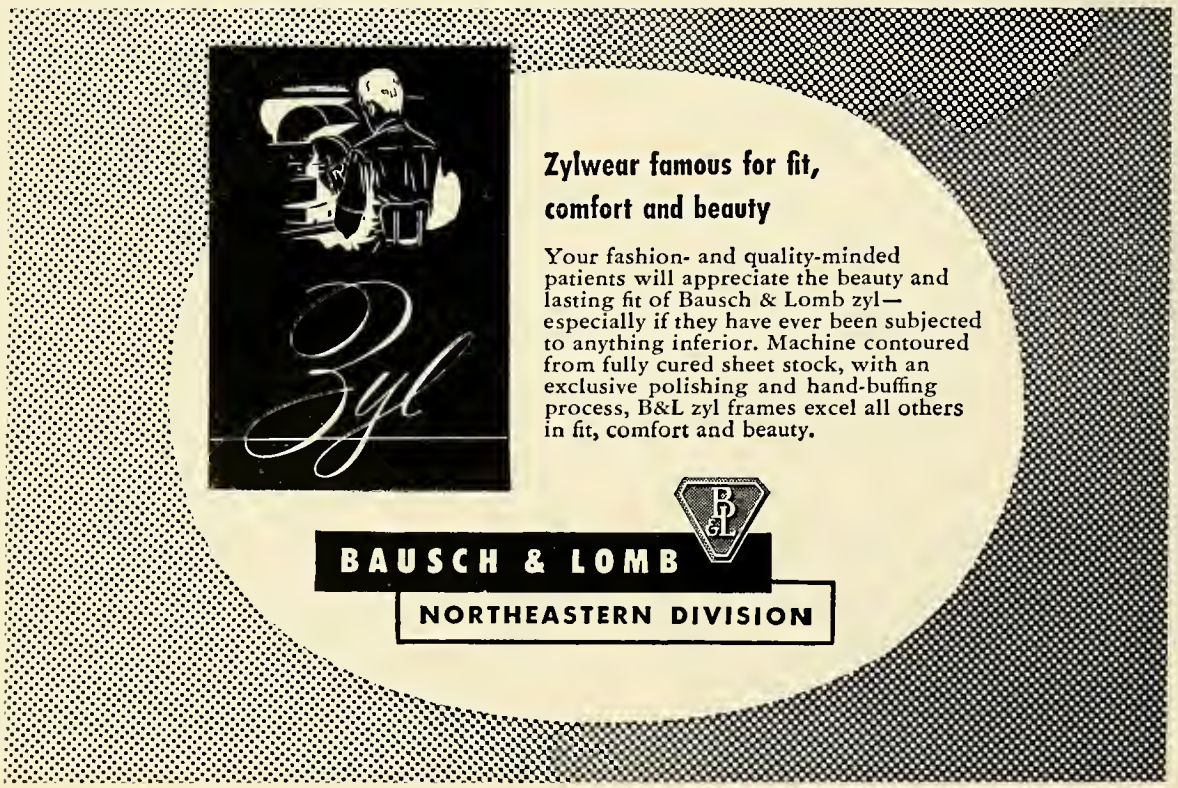
Initially the burdens of the season fell on last years returning championship lineup of: Joe Eiduks, 6'5"; Bob Brouilette, 6'5"; Paul Taylor, 6'3"; Al Greaves, 6'; and Ray Alie, 5'9". As such the starting team possessed experience, excellent height, good speed, good shooting, and a fair defense. On the bench were Sid Green, John Good, Dick Suskind, Al Lamont, Bob Schuman, Larry Miles. Adequate and willing for a normal campaign. But fate decided that this was not going to be a normal season for the defending champs. Our top scorer Brouilette was on crutches with sprained ankles, two different times, once for each ankle. Eiduks had minor neck surgery which sidelined him for more than half the season. Greaves was out temporarily with a chest injury. The burden fell on the bench. Green was the only experienced substitute, but he is only 5'6" and could not carry the load of the height that was lost; the others lacked in experience, but that was all, each and everyone of them gave the best they had, they hustled, scrapped and sometimes fought, but the rebounds went to the opposition, and with it, the scores.

With about two thirds of the season gone the squad received help from the addition of Wally Flynn and Dave Burstein. From that point we won 3 out of 5 league games, and the three point loss to Boston Teachers College came in the closing seconds of a nip and tuck battle.

LEAGUE COMPETITION

Babson has become the new champions. It has a worthy squad; their first 7 men were all over 6'3", they were fast and showed the advantages of daily practice. Babson's lone defeat was their trip to Boston Teachers College. B.T.C. finished second.

Please turn to page sixteen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SILHOUETTES

by Albert Roy

Mr. Roger Arnold

"I believe Optometry has a large and encourging future as a profession. My many contacts with current educational problems lead me to see the need for the skilled services of a well-trained optometrist. The need is there. The individual who fills that need will surely win a secure place in the community." So states Mr. Roger Arnold, M.C.O.'s affable Analytical Geometry and Calculus instructor.

Mr. Arnold has been a mathematics educator for many years. His educational background includes his graduation from the following schools: Braintree High School in 1933; Tufts College in 1937 with an AB Degree as a major in mathematics; Master of Arts Degree in education from Tufts College Graduate School in 1947. He is an alumnus of the Tufts Chapter of the Delta Upsilon Fraternity.

Mr. Arnold's first experience with teaching was in the capacity of a practicing teacher in algebra and plane geometry at Somerville High School. Next he taught algebra, geometry, trigonometry, and coached basketball at Major Edwards High School, West Boylston, Mass. He coached basketball and baseball at Walpole High in Walpole, N. H. as well as teaching algebra, geometry, trigonometry, physics and chemistry. Next he became a substitute teacher of algebra and physics at North Quincy High School. For a short time only, Mr. Arnold taught arithmetic, geometry and trig at Wentworth Institute in Boston. All of this educational experience took place before he accepted his present position at M.C.O.

Most individuals would be content to excell in one occupation, but Mr. Arnold has gone one step further and has added another feat to his list of accomplishments. We refer to his year-round activities as an agriculturist. He manages a market-gardening business (wholesale and retail). Last year, he farmed about 35 acres of corn, beans, lettuce, beets, chinese cabbage, escarole, leeks, etc. He has four greenhouses which are in use from March through November for raising tomatoes, cucumbers and radishes. He is a member of the Norfolk County Agricultural School, and the Boston Market Gardeners Association.

As a member of the Braintree School Committee, Mr. Arnold has served as a member of the School Sites Committee and the Low Cost School Housing Committee which has accomplished the building of four elementary schools and an addition to another elementary school. On March 1, 1954, Mr. Arnold had the distinction of being re-elected to a third term of the School Committee with the highest number of votes out of eleven candidates.

Roger Arnold is married and the father of two sons and identical twin daughters. His eldest son, Roger, is 16 and last Fall played left half-back for Braintree's undefeated football team. We surmise that young Roger is following his father's footsteps where sports are concerned. We find that Mr. Arnold also played high school football as well as track. In college he did some wrestling and played basketball and baseball in inter-fraternity sports. Until recently he played basketball in the Braintree Civic League and softball in Braintree Park League. He now attends the recreational gym class one night a week to play volley ball and basketball. Only a person as versatile and persevering as Roger Arnold could find enough hours in one day to fulfill all these accomplishments.

INNER DILEMMA—*continued*

falling. Just what should be done? I have one suggestion. Perhaps you have other solutions.

In the past month or two, there has been a trend on the part of some professors to take a few minutes from the lecturing time and give an interesting narration about a particular patient or speak briefly about current problems and in general stimulate interest and enthusiasm. After such lectures, one could note the increased ardor of the students and a definite rise in the average morale of the student with regard to optometry. If this trend were made a policy I feel it would be most instrumental in solving the problem. We all need a good pep talk now and then. A good football team always has a pep rally or send-off before going on the gridiron to perform. Such an event stimulates the squad and gives it confidence and assurance of victory. This analogy, though it may be poor and even limp under the burden of its crudeness, can definitely be applied to the students of the visual function at M. C. O. Remember, optometry is a field which is unique to all others, a field which encompasses treatments not embraced by other fields. True, we do not treat pathology or perform operations but this is just one branch on a tree full of activities. Gentlemen, you are experts on the eye. It is a great thrill just to reflect upon the services that you as an optometrist can render. Through Corrective Optometry you can straighten the crossed eyes of an unfortunate child without an operation. By means of sub-normal visual aids, you can virtually make the blind see. These things in themselves can bring a tremendous satisfaction to the practicing optometrist. Optometry is a field we should look up to and be proud to practice. It is a wonderful profession, and its members are joining the ranks of and walking in stride with the greatest benefactors of mankind.

BASKETBALL—*continued*

For the sake of argument, at full strength M.C.O. beat B.T.C. by 12 points and Teachers were able to beat Babson on B.T.C. court. Also, M.C.O. played every team two times on the opposition's home court. Even with our crippled squad we were able to play .500 ball. We on the squad conclude that at full strength we are the equal of any team in the league, but the championship trophy is awarded for the most victories, proving that they only pay off for wins.

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